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# The JOURNAL of GEOGRAPHY

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The business district and harbor of Boston. The historic Charles River may be seen on the right. One of the small domes on the State House is visible in the central lower margin of the picture, and a portion of Boston Commons is on the right.

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# THE JOURNAL OF GEOGRAPHY

*A MAGAZINE FOR SCHOOLS*

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*—Albert Perry Brigham*

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The JOURNAL of GEOGRAPHY

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VOLUME XXVI NOVEMBER, 1927 NUMBER 8

# CAN THE EDUCATIONAL VALUE OF REAL GEOGRAPHY IN THE JUNIOR HIGH SCHOOL BE REPLACED BY ANY OTHER SUBJECT OR COMBINATION OF SUBJECTS?

H. W. FAIRBANKS
Glendale, California

## INTRODUCTION

The movement to reorganize the so-called social science studies of the grammar school began a few years back in an effort to combine geography and history. This movement has now widened to include also civics, economics and industry. The work has been definitely organized in the seventh, eighth and ninth years of the new junior high school system under a plan proposed by Harold Rugg of Teachers' College, Columbia University. A complete course has been printed and is being tried out in the schools of the country.

The establishment of the junior high school has divided the old grammar school into two parts, and has thus tended to make a line of demarcation between the work of the sixth and the work of the seventh grades. This tendency has been still farther accentuated by the belief that studies should be handled differently during adolescence than during the earlier years.

Many teachers, not satisfied with the results of geography, as usually understood and taught, have fallen in with the suggestion that the time given to what is known in a broad way as "regional study" can be shortened without any injury to the pupil and that the subject be completed with the sixth grade. They have accepted the statement that whatever additional geography, if any, that is needed can be taught with greater economy and efficiency if the subject is included in a unit social science course.

The above plan has appealed to so many teachers wherever junior high schools have been established that all the advanced

work in geography is now "up in the air," so to speak. The demand from many quarters that the time formerly given to geography be cut down, the natural feeling of dissatisfaction with the old methods of teaching, the lack of any real understanding of the new viewpoint, and the consequent failure to appreciate its exceedingly great importance in a well balanced educational system, all taken together, have, as we might expect, led to an eclipse of the subject.

### REAL GEOGRAPHY

The writer hopes to show that geography—Real Geography, as he has called it—is a very different thing from that which currently passes for geography, that it is, when properly understood and taught, one of the two or three most important studies of the curriculum thruout the whole school course terminating with the university; and, further, that the abandoning of it at the close of the sixth grade must result in disastrous consequences to the practical and cultural outlook which the pupil ought to have at the close of the school course.

As to the advantages or disadvantages of the plan to unite in the junior high schools those subjects, other than geography, usually considered as belonging in a social science group, the writer is not qualified to express an opinion, but he does feel that so far as geography in all of its bearings is concerned, that he is competent to do so, and consequently wishes to put before those interested in the matter a most emphatic protest against including the subject in any such plan.

### THE RUGG PLAN

Harold Rugg makes the following statement in one of his pamphlets regarding the social science studies, including geography among them, as they have been organized and handled in classroom instruction: "These subjects are narrow academic compartments of knowledge, representing bodies of technical facts and principles—The conventional barriers between the conventional subjects must be ignored in our curriculum making." He further along expresses practically the same view in the following words: "the pupil's school experiences should become a replica of his later life's experiences."

As far as Real Geography is concerned the statement that its boundaries are narrow and academic and its subject matter tech-

nical facts and principles, is very far from being true. The bounds of the New Geography, as understood by those best qualified to speak, are not artificial nor are they narrow. Real Geography stands for the most comprehensive and the most significant relation of life—that of the pupil to his environment, and, in the large, of people the world over to their environments.

Harold Rugg and those who are welcoming his plan, as well as those who are trying it out but are still undecided as to whether it will work, all appear to accept the old conception of geography, still commonly taught, as the true one and handle it from that point of view.

There can be no question regarding the need for a reconstruction of the curriculum as well as methods of teaching, but it is extremely unfortunate as regards geography that those who are leading the reform movement have in mind the old locational, factual and statistical geography. They show by their handling of the subject in the various social science courses that have been established over the country that geography is for them largely a lot of material to be memorized. From the new point of view this is not geography at all but *the raw material out of which geographical concepts can arise when it is handled rightly.*

At first thought the ideas advanced by the advocates of the Rugg system that a unit course combining all five of the studies under consideration will save duplication, will get away from unnatural barriers—if, in reality, the barriers between these studies are unnatural—and fit in better with actual life conditions, have much in them to commend.

But so far as geography at least is concerned the writer does not believe that these ideas can be put into practice. Real Geography to be of value cannot be sandwiched in between other ideas. The viewpoint of Real Geography is such that if it is approached at all, no matter what the topic or region under consideration is, it must occupy the whole focus of attention.

Geography has a definite fixed goal and whatever material is introduced from history, economics, or industry, as an assistance in reaching that goal, must be handled with the sole idea of developing the geography concept, and not with the idea of teaching these studies. If it is not so handled attention is scattered, the geography concepts are scrappy, one-sided and incomplete and fail of arousing a real understanding of the matter. The attempt to

divide the attention must break the continuity. As a matter of fact, all the divergent social relations cannot be held in mind at the same time.

Intelligent wide-awake teachers who have attempted to teach a course combining only history and geography have found it impossible to teach the two viewpoints successfully in the same lesson, one of them being of necessity sacrificed. They have found it necessary to devote a series of lessons first to one and then to the other. This switching back and forth makes the work of necessity scrappy and disconnected.

The actual combination of geography and history sometimes reported is similar in its results to that of an operation in a hospital, which, in spite of the fact that it was considered successful, nevertheless led to the death of the patient.

As far as the writer is aware no competent geography teacher who unqualifiedly accepts the new viewpoint in geography has come out in favor of having the subject incorporated in a unit social science course. In addition to the protests of real geographers who cannot be considered wholly biased in their attitude, some at least of the teachers of history object to the treatment which their subject receives in the new plan.

The uncertain, chaotic and unorganized viewpoint of most geography teachers as to what their subject really is and how it should be taught so as to secure the best results seems to be one of the causes which have led to its inclusion in the Rugg plan. It is fortunate perhaps that this plan in its present stage of adoption fails to recognize the viewpoint of Real Geography. While it is evident that Real Geography could not be taught successfully in combination, yet the trial of the Rugg plan in the seventh, eighth and ninth grades would have a tendency to delay the renaissance of the subject in those grades in which it was still taught. This renaissance of geography is bound to come unless misguided enthusiasts force it entirely out of the curriculum in all grades below the university.

It is quite possible that the old geography of facts and locations acquired by memorizing can be handled in a social science course as well as it usually is singly. This is borne out by the treatment in the Rugg texts of that part of the subject matter which is evidently intended to represent geography altho the name is not used. Except for its scrappy arrangement the treatment is no better nor

worse than that of our standard texts. The viewpoint is essentially that of the old geography for the matter is factual and statistical. Such matter can be acquired only by memorizing. Rarely is the causal idea, calling for thought and investigation on the part of the pupil, to be found.

### The Natural Consequences of the Adoption of the Rugg Plan

Assuming that the Rugg plan is the best plan for the junior high school stage, it naturally follows that the inadequate presentation of formal geography in the general science course of the ninth grade (formerly first year of the high school) will be dropped. This, in the writer's opinion, would be no loss, since neither as a part of a general science course, nor as the old subject of physical geography, has the material offered been properly adapted to this stage of the pupil's development.

But if the Rugg plan is the best plan for the junior high school, then, there is no escaping the conclusion that it must be the best plan for the fifth and sixth grades of the grammar school. Rugg's statement that "the conventional barriers between conventional subjects must be ignored in curiculum making" is just as applicable to these grades as to the higher. In fact it is more applicable for we are at this stage nearer the undifferentiated starting point of all the studies which have been included in a unit social science course.

In the beginning primary grades the pupil is introduced to a study of its environment as a whole because at this stage of its development it naturally sees it as a whole and interprets its experiences as a whole. All the elements of the various subjects such as nature study, geography, science, history, economics, civics and industry are observed and discussed from the simplest possible point of approach under some comprehensive designation such as "home lore."

As the years pass the work naturally becomes more complicated and splits up into parts for the sake of convenience of handling and for greater clearness. This is a natural procedure and we cannot avoid it without doing violence to the needs of the pupil. Consequently the divisions between the subjects should not be looked upon as arbitrary but as a necessary means to progress in the special knowledge pertaining to each.

The termination of geography as an independent subject at the close of the sixth year comes at a time when the pupil is prepared by reason of his earlier work to get a great deal out of the study of man's relation to his environment.

Another unfortunate result of the stopping of geography as an independent subject at the end of the sixth year is the crowding of the work of the fifth and sixth years. The natural tendency is for this reason to begin the formal study in the fourth year in order to be able to complete a survey of the world. In many courses of study, work is undertaken in the fourth year which should have been left to the fifth. The pupil cannot visualize and understand maps of distant lands and the relations of the people living in them at this stage. As a consequence, memorizing—the curse of the old geography—has to be resorted to.

### GEOGRAPHY IS NOT A SOCIAL SCIENCE

Perhaps the most fundamental objection to the inclusion of geography in a social science course is that in reality the subject is not a social science, altho it generally seems to be accepted as such. This is a mistake as an analysis shows.

Real Geography is distinguished from all the social sciences by the fact that it has to do only with those relations that are *earth conditioned*, and in the restricted sense in which it is handled in the elementary school, with the relation between *man* and his *environment*. There are thus two sides to every geographic topic. If we study man alone no geographic concepts can be formed. Such a study is ethnology. If we consider the environment alone such a study becomes physiography.

The real social sciences, on the contrary, deal largely with man as a member of society. In the words of Miss Welsh, teacher of social science in the San Francisco junior high school: "In a unified social science course emphasis is placed upon the study of the industrial, social and political environment."

### CONCLUSION

The writer is satisfied that if the unit social science course which is now being so favorably received in many quarters should finally absorb the geography of the seventh, eighth and ninth years, an effort will be made sooner or later to merge the geography of the grammar school in a similar course. The practical and cultural

outlook which should be gained by the pupil from a proper handling of the subject will never be acquired. An understandable view of the world, using that word in its widest sense, is needed by the young citizen now as never before. No substitute for what Real Geography offers exists.

The above conceptions of the place and function of Real Geography are not idealistic. They are easily acquired by the teacher and quickly appreciated by the pupil. This has been shown more or less clearly in the school-room work of many progressive teachers.

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## A TRIP TO THE MISSISSIPPI-YAZOO FLOOD DISTRICT

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### TOPOGRAPHY

The contrast between the relief of the flood plain of the Mississippi-Yazoo basin and that of the uplands to the east is very striking. Leaving Nashville, Tennessee, and traveling westward over the Bristol to Memphis Highway, the outliers of the Highland Rim are reached about ten miles from the city, and four miles further the crest of the rim. The deep valleys cut in the upland by the Tennessee and its tributaries, and by the tributaries of the Cumberland, give the Highland Rim quite a rolling topography. Here and there one comes to wide stretches of the undissected upland that are quite level, but for the most part it impresses one as being a rather sterile and poorly productive region. As we approached Memphis, we gradually descended into the lowland of the Mississippi where the backwater of the flood area to the north filled all the ditches and low woodlands on either side of the road.[1]

Memphis, located on the high bluff of the river, does not fear floods. The surface about the city is rolling. The Mississippi Scenic Highway leading southward traverses undulating topog-

[1] The observations that form the basis of this paper were made by the writer July 2-4, 1927, while on a trip from Nashville, Tennessee, to the Mound's Landing break, 165 miles by auto road below Memphis. The flood waters thru the break were just beginning to recede.

raphy beyond the Tennessee-Mississippi boundary where the road descends abruptly upon a broad open expanse of prairie-like country—the flood plain of the Mississippi. Rising some forty feet above the level of the flood plain, the old valley wall can be traced very distinctly in a sinuous course to the southeastward. The flood plain is characteristically level with dark loamy soil. Here and there, are undrained, or poorly drained areas, the remains of some old cutoff or oxbow lake that cultivation and slope wash have not yet filled. When beyond the view of the high shore line of the upland no change of level breaks the monotony of the great expanse until you approach the river, where bands of the levee rise twenty or more feet above the plain.

## LAND UTILIZATION

This area was probably all heavily timbered, but the value of the land for agriculture has caused the removal of the timber, and in its place stretch the broad fields of cotton (Fig. 1). Here cotton is king. The plantations are large, some of them numbering in the thousands of acres, tended in small units by colored families who live in rude cabins of from one to three or four rooms. These cabins are frequently some distance from the road and have rows

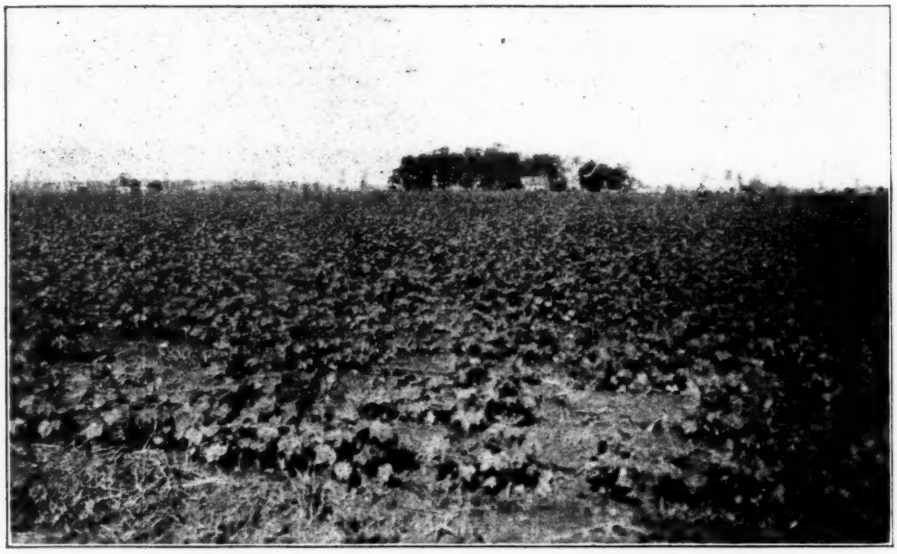

FIG. 1. A typical view of the level topography of the "Delta" region with its cotton fields and scattered patches of woods. About half way between Clarksdale, Miss., and Memphis, Tenn.

of cotton reaching to their doors, while gardens are conspicuous by their absence. The custom of planting the cotton to their very doors has been explained on the ground that the plantation owners required the tenants to keep the yard clean from weeds that the seed might not scatter to the fields. The darkey, rather than put that labor to no profit to himself, preferred to put the yard to cotton, and get a return for it while keeping it clean. Clean cultivation is one of the striking features of the plantation. Only rarely did we see cotton fields that were not clean.

The density of population is suggested by the number of Negro cabins, which seems to be one for about every forty acres or less. About the cabin usually may be seen from four to six or seven children playing. The Negro tenant rents the land for crop rent. The owner of the plantation furnishes the mules and tools, and the tenant, the seed and labor. The crop is divided equally. The plantation owner in most cases finds it necessary to furnish provisions to the tenant and his family, for which he holds a mortgage on the tenant's share of the next crop. These provisions are doled out to the tenant periodically. This in part accounts for the failure of the Negro to raise his own food supply.

As wheat elevators of the grain belt are the outstanding features of the landscape of the town, so the cotton gins in the "Delta" become the conspicuous landmarks at nearly every wayside station. One sees hay fields (alfalfa does well), some corn, and once in a while a small field of wheat, but cotton, cotton, cotton, tells you what the region depends upon. At the railway stations or along sidetracks, now and then, are seen piles of walnut and white oak logs, remnants of the fast vanishing forests.

## Flood Protection

Near the river the levee rises above the level of the plain to about the height of the roofs of the houses. When one realizes that the river, before breaking thru, was about at the top of the levee, the danger becomes apparent. The riders of the levee and their assistants during those trying days never slept. The levee was so saturated with water, they said, it would shake like the sod of a bog when trodden over. The river, even after it was at high flood stage, rose fourteen inches in twenty-four hours. A rise of two-tenths of a foot in the same length of time is considered an average fast rise. Extreme vigilance was the price of safety.

Relief agencies were so organized that 5,000 men and 100,000 bags could be delivered at a given point in a few hours.

Of the protective devices used to aid the main levee, first in importance are the sub-levees (Fig. 2). These parallel the main levee at a distance of several rods, and are much lower than the outer levee. Water, syphoned from the river, is impounded between the levees, to help equalize the pressure on both sides. These impounded waters are divided into basins by cross embankments from one levee to the other. In these inner basins, thru crawfish holes or other weak places, water sometimes boils up carrying sand with it. When such are discovered they are enclosed immediately by walls of sandbags. As the water fills this enclosed

FIG. 2. A stretch of levee showing the sublevees. Also shows how near the river came to breaking thru at this point, some half mile north of the Mound's Landing break. Photo by Brown's Studio, Greenville, Miss.

basin, the hydrostatic pressure smothers the "boil" and the danger of a larger opening is averted. On the slopes of the levee, brush, sandbags, and earth are used to stop any flow that starts to break thru. To raise the general level of the levee, rows of sandbags (sugar bags filled with earth), piled on top of each other, are generally used.

## FLOOD LOSSES

The safest place within the whole area when overflow threatens is on the levee, for here is the highest ground. It is safe, unless one should happen to be at the particular spot where the river breaks thru. The main break in this district occurred at Mound's Landing, north of Greenville (Fig. 3). About three-quarters of

a mile of levee was carried away, and the force of the water washed everything in front of it, covering much fertile soil with three or four feet of sand. As far as the eye could see, there seemed an illimitable stretch of water with the houses sticking out above its surface. The levee became the refuge for man and beast. As long as the waters covered the land, the levee was dotted with the tents of the refugees, and cattle, mules, and horses grazed on its slopes (Fig. 4).

Not all the damage done by water is due to that coming thru the breaks in the levees. When water held in by the levees stands so high above the plain, much seepage takes place. This accumu-

FIG. 3. The historic Mound's Landing break. The portion washed away is the area between where the man is sitting and that portion from which the ferry has just come. The road that runs along the side of the levee, with the aid of the ferry, was the only way Greenville could be reached by land for many weeks. Photo by Brown's Studio, Greenville, Miss.

lates to a depth of some feet over the plain. Since the general slope of the land is away from the river, seepage is more serious some distance from the levee. This spring, seepage filled in only the low pools near the levee at Beulah, but covered thousands of acres to a depth of three feet or more some miles back from the river. When the dike broke and lowered the water in the river, these seepage lands drained, sweeping roads and bridges in the path of the drainage lines. These lands were put into crops and had fairly good stands of cotton.

Besides the damage done by the immediate flooding by seepage, there is a more lasting influence in the hindrance to food production. In areas even occasionally waterlogged for an appreciable

length of time, the growth of fruit trees is impossible. Peach trees in the area even slightly inundated by seepage were destroyed. The growth of fruit is forced out of the lowlands into the uplands. Even gardens were almost a failure this season.

When we observed the broad acres of rich soil, and the beautiful cotton in clean fields, we realized something of the loss to those whose lands, only a short distance away, were covered several feet deep with water. It is the land owners who are the great losers. The Negroes for the most part have but meager house-

FIG. 4. A section of the levee refuge for man and beast. Here both seemed content. Photo by Brown's Studio, Greenville, Miss.

hold equipment and little else. They were living in tents with as good accommodations as they had at home. They were clothed and fed by the Red Cross. They wanted no more and did not seem anxious to go back to work. The Negroes were the chief sufferers in terms of loss of life, and it will probably never be known what that toll was. The flooded area was so large, the period for rescue was short, and the Negroes are so transient in the region, that many planters will not know whether many of their missing tenants were lost or only went to some other area for work.

# A SUMMARY REVIEW OF AN ANALYTICAL SURVEY OF CURRENT COURSES OF STUDY IN ELEMENTARY SCHOOL GEOGRAPHY

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## INTRODUCTORY STATEMENT

The study herein reviewed was completed in December, 1926. It comprises nearly two hundred pages, one-half of which is tabulated material. The study undertakes to give a general survey in general terms of the content of some eighty-five current courses of study in elementary school geography and to present an analysis, largely numerical, of twenty-three of these eighty-five courses. The analysis used courses of study selected upon the basis of criteria which are mentioned later.

The study is not exhaustive. It attempts to follow mainly lines that have not been very generally employed in such studies as were available at the time this was undertaken. It aims to show some weaknesses, trends, content, etc., most common to the courses examined. Part II of the study also attempts some classification of content.

For selecting courses for the first part of the study only two criteria were set up—Availability and Date of Issue. No courses were used which were not published between 1919 and 1925.

## POINTS OF EXAMINATION AND FINDINGS. PART I

The eighty-five courses were examined upon the following points: 1) Date of issue; 2) Grades included; 3) When begun; 4) Grade text is introduced; 5) Textbooks prescribed; 6) Problems; 7) Projects; 8) Minimum requirements; 9) Objectives; 10) Procedures; 11) Units of time or work or both; 12) References listed; 13) Type studies; 14) Standard tests; 15) Course given by pages in a textbook; 16) Program time; 17) Pages in the course; 18) Percentage of entire course alloted to geography; 19) Correlations; and 20) How subject is begun.

Of the eighty-five courses thus examined, thirty-four are state courses, forty-seven are city courses, one is a county course, and three are courses prescribed for the outlying possessions of the United States. Fifteen of these courses were published in 1919,

seven in 1920, fourteen in 1921, nineteen in 1922, thirteen in 1923, seven in 1924, and ten in 1925.

The geographical distribution of the courses is quite satisfactory. Eleven courses are from Eastern States, thirty-one are from Southern States, twenty-eight from Central States, thirteen from Northwest States, and two from other sources.

The grades included in the courses were found to differ widely. The most popular inclusion is grades one to seven which is the stipulation in eighteen of the courses. For geography as distinct from nature study the arrangement is grades three to seven in eighteen courses. Some fifteen other distributions appear.

The time for beginning the work in geography was found to vary as much as the grades included. According to the printed statements in the courses, geography should be begun in grade one in thirty-two cases, in grade four in fifteen cases, and in grade three in twenty-six cases. A dozen other times are indicated as being proper for starting the child on his geography work.

The one point upon which the authors of the courses are best agreed is the time for introducing the textbook. Fifty-four of the eighty-five agree upon grade four as the ideal spot for beginning the use of a textbook. Nineteen courses stipulate grade three.

A majority of the courses prescribe the textbooks to be followed. Fifty-six do this. No particular textbook is a majority favorite. Tarr and McMurry series is the most popular, being prescribed in eighteen cases. Other popular books are Frye-Atwood and Brigham and McFarlane.

Fifty out of eighty-five courses include some work with problems. Some are organized and some are unorganized problems. Some are mere curious questions and some are problems calculated to provoke creative thinking.

No agreement is found as to the definition of the term, project. However, sixty-one courses embody to some degree the project idea. In some courses it appears as merely a point of view, while in others it is well developed as an instructional device.

The practice of setting up some minimals by which to measure progress in geography is disappointingly uncommon. Only twenty-nine courses set up minimals or standards of achievement.

Just forty-nine of the courses set up aims or objectives. The objectives are commonly not very definite but they rather generally appear in the courses.

Procedures (methods, devices, etc.) appear in fifty-eight courses. There is very wide variation in the degree to which procedures are prescribed or even outlined. Some courses stress topics, problems, projects, etc., and pay very little attention to the methods of using or presenting them. State courses are more likely to stress methods than the city courses are. Methods or procedures of some kind are found in about two-thirds of the courses examined.

Forty-three courses are worked out in units of time or work or both. The plan of constructing courses on both of these bases was found in twenty-six courses. All of the above courses except two indicate more or less clearly the units involved.

Most of the courses that are worthy of the name list references for the use of either teachers or pupils or both. Sixty out of the eighty-five give more or less extensive lists of books, pamphlets, etc. Quality of material listed shows marked variation.

Types and type studies are more abundant than one might suspect. In all, thirteen courses list type studies usually fairly well developed. Nine of the thirteen do this very systematically.

Standard tests for measuring progress in geography are surprisingly absent from the courses. Only nine courses list such tests at all. Detroit and Baltimore head this list.

The survey reveals the fact that courses of study are still written in terms of pages of a textbook. Twelve such courses were found. The other seventy-three are based on topics. The conventional two cycle arrangement is evident in seventy-nine of the courses examined.

Program time is variously stated. In the state courses it ranged from twenty-five to three hundred minutes per week.

The space in the printed course of study for schools devoted to the subject of geography varies from 4 per cent to 66 per cent. Forty-four courses devote equal space to geography. Nine courses give geography more space than other subjects.

Twenty-nine different kinds of "correlation" of geography with other subjects were discovered. Language and nature study are the most common attempts in correlation. These two subjects are suggested for correlation in sixteen cases. Nature and geography are also popular correlations. There are eighteen correlations so called that appear but once each. Almost every con-

ceivable combination of subjects with geography is found suggested in the courses. This makes the degree of actual correlation a matter of grave doubt. In a number of courses it is suggested that the work in geography be correlated with four and even with five other subjects. Considering the time allotment in these courses alone, it would seem that the suggestion is almost, if not quite, impossible of accomplishment. The best conclusion seems to be that the degree of actual and desirable correlation is slight except in the cases of language, nature, and geography.

Fifty-eight distinct approaches to the study of geography are found in the courses under consideration. "Home Geography" is the most popular route. This is prescribed in twenty-four courses. "Observation" is also popular, appearing in twenty courses.

From this brief summary of the survey comprising the first part of the study, it appears that courses of study in geography are quite local and individualistic affairs.

### GENERAL STATEMENT. PROCEDURE AND PURPOSES. PART II

The second part of the study is concerned with ascertaining the content of certain courses in geography selected from the larger list. These were selected so as to give a fair and reliable random sampling at least. Twenty-three courses were selected from the list of eighty-five. The material was so handled as to give a good working idea of what courses of study actually in use contain, how they are composed, and what they are supposed to do for both pupil and teacher.

This study was made during a time when there was a great deal of activity in curriculum making and in revision of courses of study in all subjects. This fact may have interfered with the work as many places were in the midst of revising courses and did not care to have the old courses used for analysis. Many reported that they had not yet undertaken revision of the work in geography altho they had completed courses in other subjects. However, the analysis was made upon the basis of enough courses of recent date and wide geographical distribution to indicate the more common trends, content, and prescribed procedures in use. The findings show much is yet to be done before geography courses embody most of the modern ideas as to best content and best procedure in elementary school practice.

### Criteria for Selection of the Courses

Twenty-three courses were selected upon the basis of the following criteria:

1. Availability for continuous study
2. Written or published between 1919 and 1925
3. In actual service at date of study
4. State, city, or other courses in geography for public schools
5. Such geographical distribution as to avoid too much local color
6. Authorship—cooperative or single effort
7. Correlations suggested either by statement or by implication
8. Content conforming to a majority of the points used for examination in Part I

### General Statement of the Findings

The authorship of these twenty-three courses is varied. At least two-thirds of the courses are developed cooperatively. Teacher participation in curriculum making is shown in these courses to a very satisfactory degree. A few of the courses acknowledge the assistance of experts. This is not as generally true as might be desired.

Correlation is confined usually to more or less limited directions to the teacher to "correlate" certain subjects. It is a rare thing to find a thoroly correlated course of study worked out like the Detroit Social Studies Course. In general the more recently written courses are best in this particular. This, however, is far from being universally true.

Most of the courses are based upon some general plan as to methods that the authors expect to be used when the course is being employed.

A majority of the courses do not prescribe textbooks unless there is a state law regulating the use of the textbooks for the state.

State courses are more likely to be "teachers' manuals" and courses of study combined than are the city courses. This is probably due to the fact that the state courses are commonly used in schools which have little, if any, direct supervision of instruction.

All of the courses analyzed are based upon topics rather than upon pages in a textbook. Too many of the twenty-three courses,

however, give lists of topics which are either by direct assertion or by their character taken almost verbatim from the texts in common use.

All but four of the twenty-three courses and fifty of the total eighty-five courses examined contain objectives stated in some usable form.

There is evident a great amount of duplication of topics grade by grade. Some courses give a short list of topics and do not repeat these while others give considerable lists under the several grades. The conclusion is that the number of topics alone is not a safe criterion for judging the merit of a published course in geography.

A majority of the courses list problems and projects but do not classify them except in rare cases. When any attempt at classification is made, the extent is decidedly limited.

The above statement holds true as to projects. There is so much evident difference of opinion about the project, or what is a project, that it is not safe always to conclude whether the author meant problem or project.

A good majority of the courses analyzed give minimals or standards of achievement. These are not classified. Sometimes these are given grade by grade and somtimes as a sort of final examination at the end of the work.

Only a minority of the courses give type studies and standard tests. The latter do not appear to be very popular. Only one course—Pennsylvania State—actually develops a sample unit of work thoroly. The heaviest concentration of topics, problems, projects, etc., occurs in grades four, five and six.

Reference lists appear in a large majority of the courses for pupils, or teachers, or for both. The lists are usually well-balanced. *The National Geographic Magazine* is the most popular periodical. Such books as McMurry's and others dealing in geographical methods are most often listed for the teachers.

## General Conclusions

The twenty-three courses analyzed are very creditable but very local affairs. They are quite uniform as to size of page and number of pages but at this point uniformity ceases.

The authors are better agreed upon the need for and the value of reference material than upon other points.

The most popular method is the problem method.

The objectives can be classified into eight groups, the procedures into twelve, and the projects into four.

Only three topics occur in all the courses. One-eighteenth of the topics is found in grade three and less in grade eight.

Very few courses are based upon activities, attitudes, ideals. This is a regrettable fact to anyone who believes in activities and ideals as bases for school work.

The trend is decidedly toward courses worked out in terms not of textbook prescription or the mere tools of geography, but upon those less tangible things such as habits, attitudes, type studies, creative thinking problems, projects not simply taken from a book assignment, supplementary materials that enrich the work and vitalize it, and upon methods that actually bring the learner in contact with the real things about him. There are not too many evidences of the above in the courses when considered as a whole, but the material when carefully considered does show the beginnings at least of these desirable items. Enough of the more recent courses are plainly at least an attempt to work out and carry out instruction in geography along these lines.

## Summary of Analysis

Thirteen State and ten City Courses of Study were used in this part of the study.

Fifteen of the twenty-three courses are the work of committees.

Seven of the twenty-three courses are silent as to their authorship.

One of the courses is plainly the work of only one person.

Two of the courses acknowledge the assistance of professional experts.

The three most popular methods are: Problem Method, Maps, Globes, Charts, and the Topical Method.

Fifteen distinct methods appear in the twenty-three courses.

The Minnesota State Course has the largest number of topics but ranks twelfth in the number of times topics occur.

There are nineteen most popular topics.

Three hundred one topics occur in less than one-third of the courses.

Only three topics—Africa, Climate, Occupations—occur in all the courses.

Problems can be classified under twelve headings.

The Montana City Elementary Course has two hundred seventy-two problems.

Twenty-one of the twenty-three courses list problems.

Projects range in number from three to one hundred fifty-nine per course.

Projects can be classified under four types—Kilpatrick's classification.

Reference lists are well balanced.

The twenty-three courses contain:

One hundred sixty-six occurrences of procedures exclusive of duplicates and five hundred sixteen occurrences of objectives.

The total of 3,710 topics presents a total occurrence of 14,881, or an average per topic of four.

There are 1,488 problems.

There are 478 projects.

Minimal essentials occur 1,448 times.

Sixteen hundred fifty-two references are listed for pupils and teachers.

Only five courses are in any sense based upon attitudes, habits, skills.

## FINAL COMMENTS

Dr. Harold Rugg opens Chapter I of the first part of the Twenty-Sixth Yearbook with a statement to the effect that not once in a hundred-fifty years has our efforts at curriculum making caught up with the dynamic content of American life. Nothing whatever was found in the study here under consideration that in any way tends to disprove the statement. Very few of the courses in geography are dynamic or recognize such a thing as the dynamic in the life of the child to any great extent.

It seems that geography entered the curriculum prior to the Declaration of Independence even. The huge, systematic, encyclopedic progenitor[1] of more modern day compendiums on modes of living, is reflected to a noticeable degree in the work of the courses in this study. They all drag a "heavy past" up a steep grade to too great an extent.

Dr. Frank McMurry has defined a good course of study in any subject as "the sum of problems along one great line of interest

[1] Jedediah Morse. Geography Made Easy, 1784

organized in good sequence, and containing data enough to furnish satisfactory answers to the problems.'"[2] If this set of standards is accepted very few schools as yet have good courses of study in geography. Pennsylvania and Detroit and Baltimore appear to have about the best.

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## GEOGRAPHIC PROVINCES OF COSTA RICA

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Costa Rica is a small Central American Republic about half the size of Pennsylvania, extending from Nicaragua to Panama. With the exception of Panama, it is farther south than the other Central American Republics, and about a day's journey from the Panama Canal. Furthermore, it is bounded by the Caribbean Sea on one side and by the Pacific Ocean on the other.

### RELIEF

The relief of the land has a marked effect upon the life conditions thruout the country. A lowland varying in width from ten to thirty miles borders the Caribbean Sea. Farther inland these coastal lowlands give way to mountainous slopes of igneous origin. Two volcanic mountain chains traverse the interior of Costa Rica. These mountains are separated from one another by the central plateau of San José and Cartiago. The Pacific slopes are steeper and the lowlands bordering the Pacific are narrower than those on the opposite coast. The monotonous Caribbean Coast contrasts strikingly with the varied outlines of the Pacific, which include the two bold promonitories of Nicoya and Dulce.

### CLIMATE

Relief, location, and proximity of the two large bodies of water are factors which influence the climate of Costa Rica. The country is well-tempered by the northeast trades. These winds bring an abundance of moisture. Their influence, however, decreases from east to west, owing to the presence of the central mountain systems.

[2] F. McMurry, Uniform Curriculum and Examinations. N.E.A. Jour. of Proc., 1913, p. 136.

The lowlands along the Caribbean have what is sometimes called a "rainy low latitude type of climate." These lowlands have high temperatures thruout the year, no freezing temperatures, high relative humidity at all times, and heavy rainfall thruout most of

FIG. 1. Sketch Map of Costa Rica

the year. Malarial fevers are frequent owing to the high temperatures and high relative humidity.

Relief is the dominant factor influencing the climate of the central highlands. Here we find all gradations of climate from the warm, enervating climate of the lowlands to the cool, bracing climate of mountain peaks. The chief difference between the climate

of the eastern lowlands and the central highlands is in temperature, caused by differences in altitude. On the other hand, rainfall is abundant in both portions. Port Limon on the Caribbean is said to have a mean annual rainfall of eighty-nine inches, while San José, on the interior plateau, receives eighty-four inches annually.

The climate of the Pacific slope of the country does not correspond to that of the Caribbean. The lowlands along the Pacific have a marked seasonal rhythm of rain and drought. Rains begin in April, grow heavier towards September, and cease about the end of November. During the rest of the year dry weather prevails.

## Hydrography

As previously noted, two mountain chains traverse the interior of Costa Rica. These form a single watershed often precipitous on its western slope. Hence streams make their way chiefly in two directions. The narrowness of the level ground between the mountains and the sea renders almost impossible the formation of anv large rivers. The most important streams are those of the Atlantic seaboard. Owing to the prevalence of the moisture-laden trade winds, the rivers have a large volume and a steady flow. On the other hand, the rivers on the Pacific Coast are rapid and liable to sudden floods. None are large altho three bear the prefix Rio Grande—"great river."

## Geographic Provinces

An attempt is made to subdivide Costa Rica in such a way as to distinguish between each area which has internal unity of geographic conditions. Three geographic zones or provinces are recognized within the area: (1) the hot and humid coastal lowlands along the Caribbean, (2) the central highlands-mountains, mountain valleys, and plateaus, and (3) the coastal lowlands along the Pacific.

## The Caribbean Lowlands

The Caribbean Lowlands are of great importance to Costa Rica as well as to outsiders who have interests there. This importance is directly related to the banana industry which flourishes along the Caribbean Coast. Bananas require a moist, tropical climate and fertile soil. Both conditions prevail in the Caribbean Lowlands.

The banana zone embraces about 250,000 acres. However, not more than two-fifths of this is under cultivation. This industry is handled exclusively by the United Fruit Company. Negro labor

from the West Indies is used on the plantations; but management of the plantations is in the hands of Americans.

Bananas are second only to coffee in value of exports. About 8,600,000 colones[1] were exported in 1920. During the past few years, however, bananas have decreased in yield due partly to a

FIG. 2. Geographic Provinces of Costa Rica

disease whose origin is as yet unknown. Cacao is displacing bananas on the diseased fields, and gives promise of more extensive cultivation in the future.

[1] One colone is worth about 46.5 cents. The value of exchange, however may change from year to year.

Tropical timber is of importance in this region. There is some export trade in valuable timber of which the forests furnish a wide range, including mahogany, rosewood, and cedar. Some rubber is gathered from wild trees.

Limon, the chief port of Costa Rica, is located in this province. Almost the entire coffee and banana crops of Costa Rica are sent by rail for shipment at Limon to Europe and the United States. The harbor at Limon has no natural protection; so a sea-wall was built along the low-water line. An iron pier affords accomodation for large vessels.

### The Central Highlands

The highlands embrace the most important section of Costa Rica from the standpoint of human habitation and economic significance. Here one finds a cool and salubrious climate. The great plateau, on which San José and Cartiago are located, lies within this province.

This area is essentially agricultural, and in contrast to the Caribbean Lowlands with its large plantations and Mexico with its "haciendas," has a large class of peasant proprietors engaged in the coffee industry. Here one would consider fifty acres as a large plantation (finca). Coffee is grown chiefly on the plateau of San José. The splendid adaptability of this region to its growth is attributed to the nature of the soil, which consists of layers of black or dark-brown volcanic ash.

The coffee industry is far and away the most important to Costa Rica as a whole. Frequently all the members of a family are employed at the coffee "beneficio" or cleaning plant. Contrary to the banana industry, a long series of operations is necessary before one secures the finished product. Poor crops and low yields not only affect the farmer and his family but the sales fail to establish sufficient credit in foreign countries. Costa Rica is very dependent upon foreign coutries for its means of subsistence. In 1920 the imports of the country were valued at more than 48 million dollars, while the total exports amounted to merely 32 million dollars of which about 15 million were derived from the coffee crop.

In several districts mining is carried on. At the present time the principal mining centers are on the Pacific slope. Altho there are large bodies of ore in the interior, the capital is lacking.

San José, the capital of the republic of Costa Rica, lies on the central plateau of this province, 3,868 feet above sea level. It is

thoroly modern in appearance, with macadamized streets lighted by electricity. Its houses are one-storied so as to minimize the danger from earthquake.

### The Pacific Coast Lowlands

The Pacific coastal plain is narrow and relatively less important than the other two provinces. This province has a definite dry season from December until April. The dry season enables the people to engage in activities which would meet with failure on the opposite coast.

On the broad plain of Guanacaste, north of the Gulf of Nicoya, grazing is the principal industry. Sugar cane is also grown owing to the fact that it prefers a dry season at the time of harvest. The cane, however, is of a coarse variety and is consumed locally. Maize is grown by primitive methods, solely for local consumption.

Puntarenas, the principal harbor of Costa Rica on the Pacific, lies in this province. It is a port of call for the United States liners which ply between San Francisco and Panama. It has an iron pier and ample warehouse accommodations.

### Population

Of the 450,000 inhabitants of Costa Rica, the majority are descendants from the Spanish colonists—chiefly Galicians. The percentage of Spanish blood is greater than in the other Central American republics; but there is also a large population of half-castes (ladinos or mestizos) due to intermarriage with native Indians. The preponderance of Europeans is evident in the superior intelligence and the excellence of the Spanish which is spoken. The foreigners who are mostly Spaniards, Italians, Germans, and British live chiefly in the large cities of the interior. The Limon district has quite a number of blacks, mostly of West Indian origin. The United Fruit Company employs over 5,000. Native Indians still exist along the Nicaraguan border, where they are known as Prazos. The Mosquito Indians from Guatemala come every summer to fish for turtle off the Atlantic Coast.

### Transportation

Costa Rica has about 428 miles of railway. Of this the government owns 83 miles; the Northern Railroad, 135 miles, and the Costa Rica Railroad, 190 miles. At the present time, the Costa Rica Railroad is leased by the Northern Railroad. San José, the

capital is connected by rail with both Limon on the Caribbean and Puntarenas on the Pacific.

Navigation is of very little importance in Costa Rica due to the narrowness of the level ground between the mountains and the sea. The San Juan River is the most important river in the Republic. It flows along the northern boundary from Lake Nicaragua in the Republic of Nicaragua. Several small steamers ply between the inland ports and the coast.

### Conclusions

There are several major advantages to economic development in Costa Rica: (1) the favorable location with reference to the Panama Canal; (2) a variety of climate and relief with opportunities for diversification; (3) two coast lines with a good harbor on each; and (4) a railroad which connects both coasts. On the other hand, Costa Rica is in urgent need of interurban roads, capital, and business initiative. This country affords an excellent opportunity for those interested in business enterprises; since it has (1) a large amount of potential water power, (2) low labor cost, and (3) freedom from taxation on manufactures.

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## THE AIMS AND CONTENT OF JUNIOR HIGH SCHOOL GEOGRAPHY

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Immediately following the World War, the people of the United States became faddists for efficiency. Every subject of the curriculum, especially of the newly-formed junior high schools, was forced to submit to a most careful scrutiny. No longer was it possible for a subject to keep its place from sheer tradition. Because of the hazy ideas of educators about the real contribution of geography as a separate and distinct science, that subject more than any other subject in the curriculum has had to struggle for existence.

Geography is commonly thought of as a mere compilation of heterogeneous facts culled from astronomy, physiography, geology, climatology, botany, zoölogy anthropology, ethnology, sociology,

and history, and hence has no distinctive character that is exclusively its own. Even geographers have differed somewhat as to the scope of geography. Karl Ritter, the German founder of modern scientific geography, harshly assailed the unsystematic exposition of geography as found in some of the textbooks of his day. Arnold Guyot, a disciple of Ritter and a colleague of Louis Agassiz in Switzerland, came to America about seventy-five years ago to lecture at the Lowell Institute in Boston. He emphasized the casual relations and interpretation of "the how and wherefore of the phenomena . . . . and . . . . mutual actions of the different portions of physical nature upon each other, of inorganic nature upon organized beings, upon man in particular, and upon the successive development of human societies. . . . ." Professor Harlan Barrows in his presidential address before the Association of American Geographers at Ann Arbor, Michigan, December, 1922, declared that the problem of human ecology may have the vitalizing, unifying influence needed as the organizing concept of geography.

It is just this lack of proper demarcation of boundaries for the subject which has caused a certain hesitancy on the part of administrators in including geography in the curricula for the junior high schools. But, notwithstanding these shortcomings in the subject of geography, it has become recognized. The North Central Association of Secondary Schools and Colleges, for example, adopted, in 1924, the following standards:

> The appropriate subjects to be offered by the junior high school are: English, mathematics, foreign languages, history, and civics, geography, music, art, health education, vocational information and practical arts for both boys and girls, including commercial subjects.

H. O. Rugg included, among his social science pamphlets, the following which are primarily geographic in character; seventh grade, "The City and Key Industries in Modern Nations"; eighth grade, "The Westward Movement and the Growth in Transportation"; and ninth grade, "Resources and Industries in a Machine World." Numerous other instances might be cited to indicate that geography, in spite of its shortcomings, has become a recognized junior high school subject.

After admitting geography to the junior high school curriculum, the next logical step was to decide the specific educational outcomes to be derived from the study of geography, and to ar-

range an adequate course of study. But before this could be done, a study of the aims as expressed by expert opinion, in lieu of an objective and more rigidly scientific criterion, was made—each city accepting the aims which appealed to the committee on the reconstruction of the course of study. Upon the selection of specific aims should depend the selection of the subject-matter, but the committees very often made recommendations concerning certain textbooks without an analysis of what was contained therein. This method was due to two factors: lack of time to survey the complete field of aims and to make the proper analyses, and lack of procedure to carry out such analyses.

The problem of the present investigation is to determine:

1. The aims of teaching geography as set forth by expert opinion, i.e., by authors of leading textbooks, by teachers of geography, by courses of study, by writers of magazine articles and professional men in education.

2. The content of geography as found by:

a. A detailed analysis of geography textbooks.

b. An analysis of the type of questions asked by geographers in their textbooks for review exercises and practice study.

## Procedure

A classification of the various aims gathered from expert opinion was set up by defining each class objectively. The aims were then grouped according to the classes and a table of frequency made. Another frequency table was constructed to take care of the sources of the aims.

For the analysis of the textbooks the procedure was as follows: first, a word count was made of each topic discussed in the book; second, the topics were grouped by continents; third, another grouping was made on the basis of the three major phases of geography, namely, physical, economic, and human; fourth, percentages were calculated on the basis of the total number of words in the specific text for each of the amounts devoted to the individual topics treated in that text. Comparisons between texts were based upon these percentages.

The analysis of the type of questions asked by geographers in their textbooks and by teachers on examinations was based upon the following outline:

1. Memory type, i.e., those questions asking for places, lists of articles, memorized judgments, etc.
2. Partial judgment questions, such as definitions, explanations, and illustrations.
3. Real judgment questions.

## FINDINGS

The last decade has witnessed an increasing interest in curriculum construction, with special emphasis upon the curricula of the recently established junior high schools. Each subject in the curriculum had to face a restatement of its value and function. Aims by which the teaching and learning processes may be directed wisely and purposively have been set up by experts in the fields of geography and education.

A study of the aims thus set up by experts as goals for achievement in geography indicates that approximately 35 per cent of the total number of aims stress social adjustment, including within that term the understanding of human relationships, preparation for citizenship, worldmindedness, social efficiency and culture. These aims will have to react in a reconstruction of courses of study or method, or both, for, under the traditional mode of presentation of geography, little of social value is to be found.

Of the total number of aims studied, 63 per cent carried definite psychological implications. Specific habits and skills are enumerated, such as habits of manipulating materials, of giving significant titles to grafs, charts, etc.; skill to read "silently, rapidly, and hence, effectively, the materials necessary to the understanding, undertaking and solving of the problem at hand." Certain abilities are specified, e.g., "ability to build up statements of geographic principles from their experience with geographic facts." Appreciation of various aspects of geographic relationships is an objective according to the study of the aims. Nearly a fifth of the aims under the psychological group stressed facts and principles as conduct-controls contributed by geography. Slightly over 22 per cent of the total number of aims studied emphasized the growth and development of reflective thinking, judgment-making and reasoning.

Table I gives the sources of the aims used in this study. Table II gives the frequencies and calculated percentages of the aims studied.

TABLE I

SOURCES OF AIMS USED IN THE PRESENT STUDY

| Sources | No. of each | No. of aims | % of total |
|---|---|---|---|
| Geography texts | 39 | 56 | 10.8 |
| Books on the teaching of geography | 16 | 82 | 15.8 |
| Professional books on education | 14 | 89 | 17.2 |
| Courses of study | 12 | 93 | 18.0 |
| Miscellaneous sources | 12 | 69 | 13.3 |
| Magazines | 11 | 129 | 24.9 |
| Total number of aims | | 518 | 100.0 |

TABLE II

CLASSIFICATION OF THE AIMS OF TEACHING GEOGRAPHY

| Aims | Frequency | % of total |
|---|---|---|
| Total, psychological aims | 329 | 63.5 |
| Development of habits | 24 | 4.6 |
| Development of skills | 28 | 5.4 |
| Development of abilities | 27 | 5.2 |
| Development of attitudes and ideals | 19 | 3.6 |
| Development of appreciations | 41 | 8.0 |
| Development of imagination | 8 | 1.5 |
| Geography as a means of giving facts and principles | 62 | 12.0 |
| Growth in judgment-making | 116 | 22.4 |
| Mental discipline | 4 | 0.8 |
| Total, Social aims | 179 | 34.6 |
| Geography as a means of enriching experience | 20 | 3.8 |
| Understanding of human relationships | 41 | 8.0 |
| Preparation for citizenship | 19 | 3.6 |
| Worldmindedness | 35 | 6.7 |
| Social efficiency | 29 | 5.8 |
| Culture | 35 | 6.7 |
| Total, Propædeutic aims | 10 | 1.9 |
| GRAND TOTAL | 518 | 100.0 |

When the questions and review exercises of the textbooks and the questions which Wisconsin teachers ask on examinations were analyzed, a different emphasis from that shown by the study of the aims was indicated. An average of only 3.5 per cent of the textbook questions and 2.9 per cent of the examination questions involved real judgment. To these percentages may be added the average of 7.95 per cent of textbook questions and 6.3 per cent of the examination questions, which represent the amount of emphasis on questions of partial judgment, i.e., those requiring definitions, explanations, and illustrations. These questions require

the exercise of more or less clear thinking and should therefore be taken into consideration when finding the present practice in regard to training for the development of thinking. However, an average showing of less than 10 per cent of the questions either from the textbooks or from teachers' examinations is clearly inadequate to meet the demands of the aims as stated for the development of judgment and reasoning. Clearly it is evident that provision for the problem-solving in geography must be made, if the proper emphasis according to the stress found in the study of over 22 per cent of the aims is to be met.

For the development of habits, skills, abilities, attitudes, ideals and appreciations, repetition is, of course, the necessary procedure. Associative recall as well as automatic rote memory play some part in the development of habits, skills, etc. Therefore, memory may be called upon to fulfill the 35 per cent of the aims as stated by the various authors, requiring the development of habits, skills, abilities, attitudes, ideals and appreciations. But it can scarcely be justified to say that the average of 90 per cent of the questions requiring recall for responses is due to the need for the development of said habits, skills, etc.

The facts and principles called for in 18.8 per cent of the psychological aims can scarcely be a justification for the percentages given to place geography and to the listing and naming of things. The percentages—textbook questions of place-geography, 35.5 per cent; teachers' place-geography questions, 70 per cent; textbook exercises requiring the naming and listing of things, 22 per cent; teachers' questions of the same kind, 6 per cent—make too high a quantity to be explained upon the basis of meeting the requirements set up for the aims stating facts and principles as objectives. Yet it is evident that there must be some attention paid to the acquisition of facts and principles in order to provide mental materials for thinking and judgment-making.

## Analysis of Textbooks

The analysis of the content of six textbooks was made, as was said, on the number of words actually devoted to each topic. The calculated percentages of the total number of words in each text devoted to the various topics served as a basis for comparison.

Two books had 39 and 45 per cent, respectively, devoted to physical geography. The other four texts, by stressing the eco-

nomic aspects, seemed to point to a standard of economic geography for the junior high school period.

While none of the texts stressed human geography, *per se*, more markedly than either physical or economic geography, yet it was difficult to differentiate the human elements and economic elements in many instances, and, therefore, the fairest estimates can be arrived at only by combining the percentages of the two phases of geography. When such a combination is made, all the texts may be termed, human-response geographies. The analysis of the content-matter of the six books, when reduced to averages, showed:

| | |
|---|---|
| Physical Geography | 31.3% |
| Human Geography | 26.8% |
| Economic Geography | 41.9% |

Thus it appeared that slightly less than a third of the book, on the average, was given to a discussion of and explanation of the physical aspects of the environment, e.g., topographic forms, climatic phenomena, etc.

On the other hand, the economic aspects of geography were stressed to the extent of approximately two-fifths of the book on the average. The average percentages of the items in economic geography as found in the textbook analysis were:

| | |
|---|---|
| Mining and mineral resources | 6.56% |
| Lumbering and forest resources | 3.57% |
| Fisheries | 1.28% |
| Manufacturing | 7.50% |
| Trade and commerce | 2.89% |
| Transportation | 4.57% |
| Agriculture | 15.25% |

This showing indicated that agriculture should have greater emphasis than is usually given in courses of study, if the judgment of expert opinion is worthy of acceptance.

The showing of an average of approximately 27 per cent for human geography approaches to some degree the 34.6 per cent of the total number of aims, which amount stressed the social adjustment objective in geography. If, however, the economic and human geography are combined, as was suggested in the preceding paragraphs, the respectable average of approximately 69 per cent of the average textbook is devoted to the human aspects of geography.

The analysis of the content of the textbooks was made by determining the number of words actually devoted to each topic of the major phases of geography. The physical aspect includes the discussion and explanation of physical factors of environment, e.g., topographic forms, climatic phenomena, etc. The human aspect of geography covers the interplay of man and his environment. While it is understood that economic geography is a phase of human geography, the topics which were purely economic, such as extractive industries, agriculture, manufacturing, trade and commerce and transportation, were sorted and kept separate in order to determine the extent to which the economic phase of geography is stressed by the various textbook writers. Those topics referring to social conditions, historical influences, life in the great cities, etc., were simply denoted human geography. In determining the comparison of the texts for human geography, the two percentages, economic geography and social geography, should be added to obtain the following table of "Human Geography."

HUMAN GEOGRAPHY IN THE SIX TEXTS

| | |
|---|---|
| Text A | 67.40% |
| Text B | 88.55% |
| Text C | 62.74% |
| Text D | 63.14% |
| Text E | 65.54% |
| Text F | 55.26% |

Table III gives the percentages for the six texts for the three major phases of geography.

TABLE III

DISTRIBUTION OF THE THREE MAJOR PHASES OF GEOGRAPHY IN THE SIX TEXTS

| Texts | Physical % | Economic % | Human % |
|---|---|---|---|
| A | 32.61 | 38.00 | 29.39 |
| B | 11.45 | 60.53 | 28.02 |
| C | 37.26 | 33.65 | 29.09 |
| D | 26.86 | 46.83 | 26.31 |
| E | 34.46 | 39.90 | 25.64 |
| F | 44.73 | 31.78 | 23.49 |

Text B is limited to the discussion of the United States and Canada, and hence is dropped from the number of texts in the comparison of percentages devoted to continents. Table IV gives the comparison based upon space devoted to the continents.

TABLE IV

PERCENTAGES DEVOTED TO THE VARIOUS CONTINENTS IN THE TEXTS STUDIED

| Continent | Text A % | Text C % | Text D % | Text E % | Text F % |
|---|---|---|---|---|---|
| North America | 47.70 | 53.48 | 47.82 | 41.64 | 30.82 |
| South America | 11.60 | 4.99 | 7.26 | 9.29 | 5.69 |
| Europe | 18.70 | 16.36 | 21.37 | 20.39 | 14.50 |
| Asia | 8.70 | 8.30 | 8.17 | 11.02 | 4.98 |
| Africa | 4.00 | 3.60 | 3.52 | 9.61 | 1.47 |
| Australia and Pacific Isles | 4.40 | 2.45 | 1.29 | 5.27 | 0.43 |
| Polar Regions | 0.20 | 0.41 | ..... | 1.02 | ..... |

From the above figures it is clearly evident that a decided emphasis should be placed upon the mastery of the geographic facts and principles relating to North America; that the stress should be placed upon the other continents according to the following order: Europe, Asia, South America, Africa, and Australia and the Pacific Isles.

The suggestions which this investigation has to offer are as follows:

1. More provision in the junior high school geography course for the training of proper social attitudes and ideals, and an opportunity for participation through school-room groups in socially worth-while activities.

2. Greater stress on problem-solving both as a means of attaining the aim of development of judgment-making and reasoning and as a device for arousing interest which will be direct motivation for classroom activity.

3. Less memory emphasis in questions and more real judgment responses required.

4. Facts may be tested effectively and rapidly by the new-type examination questions, by multiple-response and completion exercises. Drill material of the older, more formal type may be replaced by some of the newer practice exercises which arouse spontaneous interest through the play spirit.

5. North America should be stressed in outlining a course of study for the junior high school.

6. Human geography, including man's economic responses, should be the phase of geography treated in the junior high school.

## NATIONAL COUNCIL MEETING

Plans are now nearing completion for the next annual meeting of the National Council to be held in Nashville, Tennessee, December 27 and 28, 1927. Sessions will be held Tuesday forenoon, afternoon, and evening, and Wednesday forenoon. The Annual Dinner and "get together" will be Tuesday evening at the regular dinner hour. All meetings will be in George Peabody College for Teachers. The meetings of the American Association for the Advancement of Science will begin Monday evening and continue thruout the week and those of the Association of American Geographers will begin Wednesday afternoon. All this assures a great treat to those who attend. Special railroad rates of a fare and one-half, on the certificate plan, have been granted. Do not fail to obtain a *Standard Certificate* when you purchase your ticket. This will entitle you to a half-fare ticket home by the same route. This is the opportunity and now is the time to plan a trip to one of the most interesting parts of the South. DO IT NOW and let nothing keep you away. Write the Secretary—Geo. J. Miller, State Teachers College, Mankato, Minnesota—saying that you will be there and to reserve a place for you at the Annual Dinner. Headquarters for all geographers will be at West Dormitory. Room Reservations should be made, as early as possible, with Dr. A. E. Parkins, George Peabody College for Teachers, Nashville, Tennessee. Meals will be served at the College Cafeteria.

# GEOGRAPHICAL NOTES AND NEWS

*The Geographic Society of Tempe State Teachers' College, Arizona* was organized in November, 1923, by a small group of enthusiastic students in the geography classes. From the first the venture met with success, and now enjoys a most enviable reputation for the worth of its activities and accomplishments and for the quality of its membership.

Some of the alumni members of the Society have this year organized "The Arizona Geographical Society," having as their chief objective, the advancement of geography in Arizona. Their activities as outlined for the immediate future aim especially toward making available better geographic material for the children and teachers of the state. It is also hoped that some of this material may become of service beyond the state boundaries.

The student society is at this time also looking toward a broader horizon. They would like to know of and hear from any similar student organizations in normal schools, colleges, or universities. With such, they would be pleased to exchange ideas and regional geographic material not otherwise available. The Society has recently purchased photographic equipment and hopes to make a collection of representative Arizona photographs of geographic character, which may later become the basis for exchange of local geographic illustrations. The Society also wishes to lend encouragement to the formation of similar organizations in other institutions.

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## LARGE SPRINGS IN THE UNITED STATES

What are the largest springs in the United States, how much water do they discharge, and what geologic conditions produce them are questions which the Geological Survey has answered in a report by O. E. Meinzer that has just been published as Water-Supply Paper 557. A spring of the first magnitude is one that has an average discharge of at least 100 cubic feet a second, or 65 million gallons a day. This is enough water to supply a city of half a million inhabitants and is, in fact, about the quantity that is consumed in Washington, D.C. The report shows that there are about sixty-five springs in the United States which supply at least this amount of water, and that there are several springs or groups of springs in the country each of which produces enough water to supply New York City.

Of the sixty-five first-magnitude springs thirty-eight issue from volcanic rocks, twenty-four from limestone, and three from sandstone. Of the thirty-eight springs in volcanic rocks sixteen are in Oregon, fifteen in Idaho, and seven in California; of the twenty-four limestone springs eleven are in Florida, seven in Missouri, four in Texas, and one each in Alabama and Arkansas; the three sandstone springs are all in Montana. The volcanic rocks are chiefly basalt that was greatly jointed and broken at the time it solidified, but large springs also issue from obsidian and rhyolite and from fragmental volcanic material. Limestone is so readily worn away by percolating ground water that it may be full of crevices, caverns, and natural tunnels. In many limestone regions surface streams are virtually absent, and nearly the entire drainage system consists of natural tunnels that carry the water underground. Where these tunnels come to the surface they produce large springs. The sandstone springs and a few of the other large springs issue from great fissures produced by faulting.

As a rule the large springs yield water that is very clear, but a few of the limestone springs become muddy after heavy rains. In deep spring pools the clear water generally has a beautiful delicate blue hue, and hence the name "Blue Spring" is applied to several of the large springs. The water in some of the spring pools is so transparent that objects at the bottom are distinctly visible, and fish can be seen swimming about as if in mid-air. In the well-known Silver Spring, in Marion County, Florida, glass-bottom boats are used, and the view through the sun-lit waters of the deep spring basin, with its underwater vegetation and fish of many varieties, is described as truly fascinating.

The huge springs that issue from the black lava walls of the canyon of Snake River below Shoshone Falls, in Idaho, are very spectacular. In a forty-mile stretch of the canyon below the falls there are eleven springs of the first magnitude, the largest of which furnish about enough water to supply New York City, and altogether the springs that discharge into this canyon yield enough water to supply all the cities in the United States of more than 100,000 inhabitants with 120 gallons a day for each inhabitant. Unfortunately, however, not even one large city can avail itself of this abundance of spring water, which is as pure as any bottled water sold for general use. Many of the springs issue 100 to 200 feet above the river, and their clear waters, dashing over the black rocks of the canyon walls, produce cataracts of striking beauty. The Thousand Springs, which discharge 864 cubic feet a second, are now in part harnessed to produce power, but formerly they made a waterfall 2,000 feet long and 195 feet high. Snowbank Spring, which is a part of the Thousand Springs, dashed over the rough talus slope forming a cataract of pure white against a background of intense black. The Niagara Springs, which issue from the canyon wall 125 feet above the river level, also form a spectacular cataract.

## CENTER OF INDUSTRY IN UNITED STATES

In January, 1908, the center of industry in the United States was on the northern boundary of Indiana, about 110 miles east of Chicago. In January, 1918, it was still on the northern boundary of Indiana but had moved about fifty miles nearer to Chicago. In January, 1926, it had moved twenty-five miles to the southwest of its position in 1918 and was about fifty miles southeast of Chicago. The total movement in the eighteen years from 1908 to 1926 was about seventy-five miles in a west by south direction. This slow movement of the center of industry during a period when the capacity of prime movers in central stations and manufacturing plants increased about 140 per cent indicates that industrial development in the United States is proceeding at about the same rate in all sections but a trifle more rapidly in the western and southern parts of the country.

The geographic center of the United States is near the center of the northern boundary of Kansas, and the center of population is in Owen County, southwestern Indiana. The center of industry of the United States in 1926 was therefore 640 miles east by north of the geographic center and about 170 miles due north of the center of population. By U. S. Geol. Sur.

# GEOGRAPHICAL PUBLICATIONS

H. Foster Bain. **Ores and Industry in the Far East.** *229* pp., 19 maps and diagrams. Council on Foreign Relations, N.Y. 1927.

We have heard much of the "Yellow Peril" as popular writers and speakers presented a picture of the awakened East, especially China. The lay public has been led to believe that China would soon acquire a material development equal to that of Western Europe or America, and hence, with its huge population, would inevitably dominate the rest of the human race. In the history of most "perils" there comes a time when the cold, undecorated, sober facts enter into an analysis of the situation. If the Chinese, or any other people of the Orient, are to attain an industrial development and a standard of prosperity comparable to that existent in the principal countries of Europe and America, they must possess, or have readily accessible, the basal essentials of modern industry. The three vital ones are coal, iron, and oil. Dr. Bain has summarized the resources of these and other important minerals in the Far East and stated in an exceptionally clear manner their significance in the evolution of modern industrial nations in the Orient.

It is evident that former reports exaggerated greatly the mineral resources of the Oriental countries. Data now at hand make it certain that former figures must be lowered very considerably even for coal in China. Dr. Bain presents in a striking and effective manner, the bearing that the known reserves have upon the possible future industrial development of each country, e.g., the coal reserves of China "would only be adequate for seventy years for the consumption of the United States at its annual rate. It would last about sixteen years if the per capita rate of consumption of the United States were applied to the population of China." The actual iron reserves "would last the Chinese less than two years on the American basis of per capita consumption; the possible reserve would last nearly three years." The iron reserves of Japan would last the Japanese a trifle more than two years at the American rate of per capita consumption. It appears certain that the Far East does not possess the mineral resources that would enable it to attain a stage of industrialization comparable to that of the West. In fact, the Far East is seriously handicapped in the industrial race and in world competition. Dr. Bain has given us a basic study that should be read by all who are concerned with the Orient, foreign trade, or international politics.

G.J.M.

Griffith Taylor. **Environment and Race.** *369* pages, 6 plates (30 photos), 93 figures, (mostly sketch maps). Oxford University Press, American Branch, N.Y. 1927. $7.50.

Dr. Taylor, head of the Department of Geography at the University of Sydney, Australia, is widely known for the originality of his writings and for his effective studies of the Australian environment. The present volume is largely an expansion of articles published in the *Geographical Review* (1919-26). Its subtitle is "A study of the evolution, migration, settlement and the status of the races." Parts are: I. Introduction; II. Changing Environment and Race Distribution, (185 pp.); III. The White Race in Australia, (60 pp.); IV. Potential White Settlement (45 pp.).

Four conclusions from this thought provoking book may be given. (1) The people of the world have spread out in successive waves from Central Asia, and each of the continents have representatives of almost all of them. For example, the Indians of

North America, instead of being of one ethnic stock, represent five stocks. The Iroquois Indians of the Eastern States are grouped ethnically with the Iberian or Mediterranean stocks of the old world. The Algonquins, however, are closely related to the Aryan speaking peoples. The Sioux Indians are later arrivals from Asia and are related to the Alpine peoples of Europe and Asia. In eastern Brazil, close relatives of the primative Australians are found.

(2) Dr. Taylor, and certain other scholars, notably Professor Dixon, of Harvard, conclude that the so-called Nordic or Teutonic race is a blend of the Mediterranean (Iberian), Alpine and some more primative peoples. Dr. Taylor believes that the Alpine race is the latest of the main strains to evolve, and in some respects is the highest race. He considers that most Chinese and Japanese belong to the Alpine race.

(3) Dr. Taylor's conclusions as to the comparative poverty of resources of Australia are significant. He believes that Australia, which is a trifle larger than the United States, will never support more than about one-tenth as many people as the United States can support. He never expects it to support more people than the British Islands. The chief cause for this poverty of Australia is the large proportion of the continent having inadequate rainfall. Many places which have a fair average annual total, frequently have seasons with almost no rainfall.

(4) Dr. Taylor believes that the tropical and arid regions will not soon be occupied by white man, as both of these regions are fundamentally unfavorable to man of all races. He believes that the region of cool, moderately rainy climate and large coal resources will contain most of the world's future white population which he estimates at about 1,300,000,000 or approximately as many as the colored peoples of the world total today. As Europe is considered practically filled, half of the predicated increase is allotted to North America. The future population of the United States is estimated at 500,000,000, over twice as many as excellent American authorities think likely. And Canada, which now has only about one-twelfth as many people as the United States, is expected ultimately to have one-third as many!

S. S. VISHER

*Indiana University*

Stella Court Treatt. **Cape to Cairo.** 251 pp., 1 map and 63 photos. Little, Brown, and Company, Boston. 1927. $5.00.

This volume of travel and adventure is written in a clear and interesting style that holds the adventure lover to the end of the story. The story details the journey by auto trucks from Cape Town to Cairo. Many of the descriptions are splendidly done, especially those of Victoria Falls. However, it is unfortunate that the map gives scarcely any of the place-names described in the story and hence it is impossible to associate the descriptions with the exact location. This materially lessens the value of the book. Since much of the book relates the trials and tribulations of the journey under African conditions, with its hot, humid climate, and myriads of mosquitoes, gnats, bugs, and other pests, it is a bit difficult to reconcile the "love" of Africa expressed by the author at other points in the book. Perhaps the "love" shone forth on sunshiny days. The book can scarcely be credited with much scientific value. Perhaps this phase of the journey is to be presented later. But as a book of adventure it should interest a large group of readers.

G.J.M.